

# IMMEDIATE LOADING OF "ALL-ON-4" MAXILLARY PROSTHESES USING TRANS-SINUS TILTED IMPLANTS WITHOUT SINUSBONE GRAFTING: A RETROSPECTIVE STUDY REPORTING THE 3-YEARS OUTCOME

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## PURPOSE

To report the outcome of trans-sinus tilted implants for the rehabilitation of the complete edentulous atrophic maxilla using the All-on-4 concept with immediate loading.

## MATERIALS AND METHODS

This retrospective clinical study included 70 patients treated with 280 implants (Nobel Biocare), 83 of which were trans-sinus implants supporting 70 prostheses. The inclusion criteria were need of maxillary complete edentulous rehabilitation without enough bone height posterior to the canines to anchor the implants. The trans-sinus implant head was anchored on the bone available just posterior to the anterior sinus wall and inferior to the sinus floor. The trans-sinus implant body was inside the sinus, and its apex anchored in the bone between the anterior sinus wall and the nasal cortical. The nasal cortical was used, if necessary, to achieve a double bicortical anchorage. Implants were immediately loaded with cross-arch fixed prostheses. Follow-up examinations were performed after 10 days, 2, 4 and 6 months, and 1, 2 and 3 years. Radiographic evaluations were performed after 1 and 3 years of function. Outcome measures were success of the prostheses, success of the implants, complications, peri-implant marginal bone levels, and aesthetic and functional complaints. Survival was calculated at implant level and using the patient as the unit of analysis (first implant failure in any given patient) using life-table analysis.

## RESULTS

Seven patients dropped out of the study. Three trans-sinus tilted implants were lost in 3 patients, giving a cumulative survival rate of 95.7% and 96.4% at patient and implant level, respectively. One conventional tilted implant was lost in 1 patient (one of the patients that lost a trans-sinus tilted implant), giving a cumulative survival rate of 98.1%. One straight implant was lost in one patient (a second patient that lost a trans-sinus implant), giving a cumulative survival rate of 98.6% and 99.3% at patient and implant level, respectively. The survival rate of prostheses was 100%. Sinusitis occurred in 2 patients (2.9%). The marginal bone resorption was on average (standard deviation), 0.96 mm (0.62 mm) and 1.14 mm (0.74 mm) for the trans-sinus tilted implants, 0.89 mm (0.54 mm) and 1.06 mm (0.71 mm) for the conventional tilted implants, and 0.62 mm (0.35 mm) and 1.15 mm (0.51 mm) for the straight implants after 1 and 3 years of follow-up, respectively.

## CONCLUSIONS

The high survival rate registered at patient and implant level indicates that the outcome of immediately loaded trans-sinus implants for the rehabilitation of edentulous atrophic maxillae to avoid sinus lift procedures is a viable treatment in the short- and medium term. Future studies should focus on the long-term outcome of this rehabilitation modality.